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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,631	07/19/2006	Hironori Suzuki	293591US0X PCT	6096
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER TAKEUCHI, YOSHITOSHI	
			ART UNIT 1793	PAPER NUMBER
			NOTIFICATION DATE 01/05/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/586,631	Applicant(s) SUZUKI ET AL.	
	Examiner YOSHITOSHI TAKEUCHI	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>19 Jul 2006 & 6 Nov 2007</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Objections

5. Claims **9** and **12** are objected to because the ratio by mass cannot be “less than 100/0.”

For purposes of examination, the examiner interpreted this to mean a “ratio of 100/0.”

Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

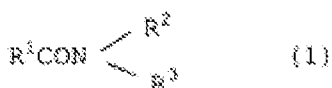
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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. The preamble for claims 1-12, “[a] lubricant for powder metallurgy” is treated as intended use, and is not given patentable weight. See MPEP § 2111.02(II).

5. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieckert et al (US 5,952,274).

a. Regarding claims 1 and 2, Rieckert teaches a lubricant for metalworking fluids (column 1, lines 57-60) comprising a polyhydroxycarboxylic acid amide of the following formula:



wherein R₁ represents an alkyl group having from 5 to 7 carbon atoms and substituted with plural hydroxyl groups (column 1, line 67, where sugars have hydroxy groups in a ratio of 1:1 to carbon); and R₃ represents a hydrogen atom, or a hydrocarbon group having from 1 to 30 carbon atoms). Rieckert broadly teaches polyhydroxycarboxylamide for use as lubricant in metalworking fluids (column 1, lines 57-61). While Rieckert does not specifically teach a structure where R₂ represents a hydrocarbon group having from 8 to 30 carbon atoms, Reichert broadly teaches the use of polyhydroxycarboxylamides, which includes those polyhydroxycarboxylamides with a R₂ hydrocarbon group having from 8 to 30 carbon atoms.

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As a result, it would have been obvious to a person of ordinary skill at the time of the invention to select a polyhydroxycarboxylic acid amide compound where the R_2 group consists of from 8 to 30 carbon atoms because Rieckert teaches a polyhydroxycarboxylic acid amide with a broad range of R_2 carbons, which can overlap the entire claimed range of the instant invention, and Rieckert teach the same utility (i.e., a metal lubricant as in the instant invention) in the whole range of R_2 .

b. Regarding claim **3**, Rieckert teaches the composition of claim 1, wherein the polyhydroxycarboxylic acid amide (1) is an aldonic acid amide (column 1, line 65 to column 2, line 17, where aldonic acid is a sugar acid and Rieckert teaches amides of sugar acids with 5 to 7 carbon atoms).

c. Regarding claim **4**, Rieckert teaches the composition of claim 1, wherein R_1 has 5 carbons atoms (column 1, line 67).

d. Regarding claim **5**, Rieckert teaches the composition of claim 1, wherein R_3 is a hydrogen atom (column 2, lines 1-2, where N-substituted amides would have R_3 with a hydrogen atom).

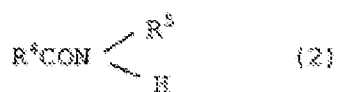
6. Claims 6, 7 and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieckert et al (US 5,952,274) in view of Storstrom (WO 95/33589).

a. Regarding claim **6**, Rieckert teaches the composition of claim 1 but does not teach a mean particle size of from 1 to 300 microns. Storstrom teaches a lubricant for metal-powder compositions where the average particle size of the lubricant is preferentially in the range of 3 to 100 microns in order for the lubricant to leave pore structure of the metal-powder composition during the compaction (page 7, lines 15-25).

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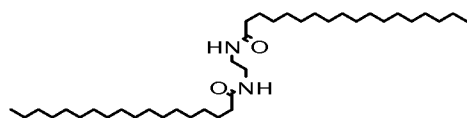
As a result, it would have been obvious to a person of ordinary skill at the time of the invention to use the lubricant of Rieckert with particle sizes in the range of 3-100 microns in order for the lubricant to leave the pore structure of a metal-powder composition during the compaction.

b. Regarding claim 7, Rieckert teaches the composition of claim 1 but does not teach an auxiliary lubricant and in which the auxiliary lubricant is at least one selected from a metal soap, an alkylenebis fatty acid amide and a fatty acid amide of the following formula (2):



Where R_4 represents a hydrocarbon group having from 7 to 29 carbon atoms; R_5 represents a hydrogen atom, or a hydrocarbon group having from 1 to 30 carbon atoms.

Storstrom teaches ethylenebisstearamide is a metal-powder lubricant (page 3, line 13) with the following structure:



Here, R_4 has 11 carbon atoms and R_5 has 14 carbon atoms. Furthermore, Storstrom teaches the composition may contain other lubricants, such as amide wax types (page 7, lines 8-11). As a result, it would have been obvious to a person of ordinary skill at the time of the invention to combine the metal-powder lubricants of Rieckert and Storstrom because Storstrom teaches that such a mixture is suitable for making sintered metal products via warm compaction.

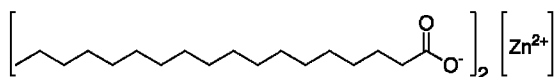
c. Regarding claim 9, Rieckert teaches the composition of claim 1 but does not teach an auxiliary lubricant. Storstrom teaches the auxiliary lubricant and that it can be used in a mixture with other lubricants, such as amide wax types (page 7, lines 8-11), but does not teach a mixture of amide wax type lubricant to auxiliary lubricant in a ratio by mass from 30/70 to 100/0.

However, “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.”

In re Aller, 220 F.2d 454, 456 (CCPA 1955). See also In re Boesch, 617 F.2d 272

(CCPA 1980). In this case, Storstrom does not specify the workable ranges for a mixture of amide wax type lubricant to auxiliary lubricant in a ratio by mass from 30/70 to 100/0, but it does describe the general conditions of the claim, namely the auxiliary lubricant and that it can be used in a mixture with other lubricants, such as amide wax types. It would not be inventive to discover the workable ranges by routine experimentation of the invention taught by Storstrom mixed in the lubricant of Rieckert.

d. Regarding claims **10** and **11**, Rieckert in view of Storstrom teaches the composition of claim 7, which further contains a fatty acid, wherein the fatty acid is a saturated aliphatic monocarboxylic acid having from 18 carbon atoms (page 7, lines 8-11, where the stearate in zinc stearate is an aliphatic monocarboxylic acid with 18 carbon atoms)



Furthermore, Storstrom teaches the composition may contain other lubricants, such as amide wax types (page 7, lines 8-11). As a result, it would have been obvious to a person

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of ordinary skill at the time of the invention to combine the metal-powder lubricants of Rieckert and Storstrom because Storstrom teaches that such a mixture is suitable for making sintered metal products via warm compaction.

e. Regarding claim **12**, Rieckert in view of Storstrom teaches the composition of claim 7. Storstrom teaches the fatty acid and that it can be used in a mixture with other lubricants, such as amide wax types (page 7, lines 8-11), but does not teach a mixture of amide wax type lubricant to fatty acids in a ratio by mass from 20/80 to 100/0.

However, “where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F.2d 454, 456 (CCPA 1955). See also In re Boesch, 617 F.2d 272 (CCPA 1980). In this case, Storstrom does not specify the workable ranges for a mixture of amide type lubricant to fatty acids in a ratio by mass from 20/80 to 100/0, but it does describe the general conditions of the claim, namely the fatty acid and that it can be used in a mixture with other lubricants, such as amide wax types. It would not be inventive to discover the workable ranges by routine experimentation of the invention taught by Storstrom mixed in the lubricant of Rieckert.

f. Regarding claim **13**, Rieckert teaches the composition of claim 1 but does not teach mixing the lubricant and a metal powder. However, Storstrom teaches amide wax types are useful metal-powder lubricants (page 7, lines 8-11, where the composition of Rieckert is an amide type lubricant taught by Storstrom).

As a result, it would have been obvious to a person of ordinary skill at the time of the invention to use the lubricant of Rieckert with powder metallurgy because Storstrom

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teaches amide waxes, such as the Rieckert lubricant, can be used in powder metallurgy as a lubricant.

g. Regarding claim **14**, Rieckert teaches the composition of claim 1 but does not teach a method for producing a sintered body, comprising shaping a mixed powder for powder metallurgy of claim 13 through compression followed by sintering it. However, Storstrom teaches shaping a metal-powder composition through compaction (page 1, line 8) with an amide type lubricant (page 7, lines 8-11, where the composition of Rieckert is an amide type lubricant taught by Storstrom) followed by sintering (page 1, line 6).

6. Claim **8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Rieckert et al (US 5,952,274) in view of Storstrom (WO 95/33589) and further in view of Raza (US (6,323,159)

Rieckert in view of Storstrom teaches the auxiliary lubricant of claim 7, but does not teach the auxiliary lubricant chosen from either (N-octadecenyl)hexanoic acid amide or (N-octadecyl)docoseic acid amide. Raza teaches a lubricant composed of thermoplastic polyurethane and an amide (abstract) for use with metal parts (column 1, line 23). Furthermore, Raza teaches the amide component of the lubricant is preferably N-oleyl palmitamide (abstract), which is a common name for (N-octadecenyl)hexanoic acid amide.

As a result, it would have been obvious to a person of ordinary skill at the time of the invention to use an auxiliary lubricant composed of N-oleyl palmitamide with the lubricant of Rieckert for use with powder metallurgy, since Storstrom teaches that such a mixture is suitable for making sintered metal products via warm compaction.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOSHITOSHI TAKEUCHI whose telephone number is (571) 270-5828. The examiner can normally be reached on Monday-Thursday 9:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Supervisory Patent Examiner, Art Unit
1793

/YOSHITOSHI TAKEUCHI/
Examiner, Art Unit 1793